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Figure 1

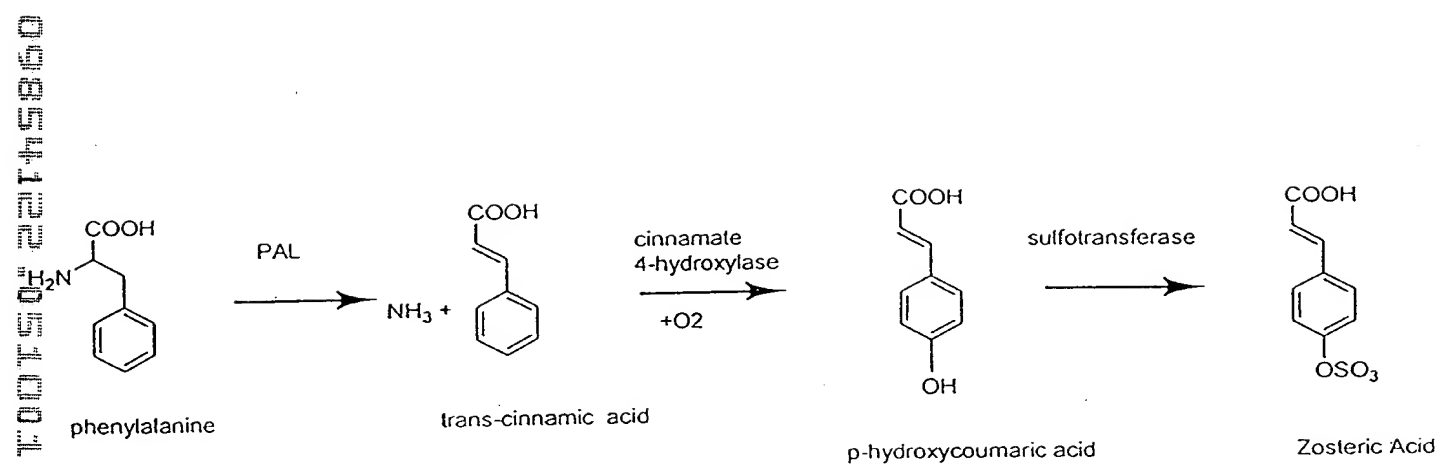


Figure 2

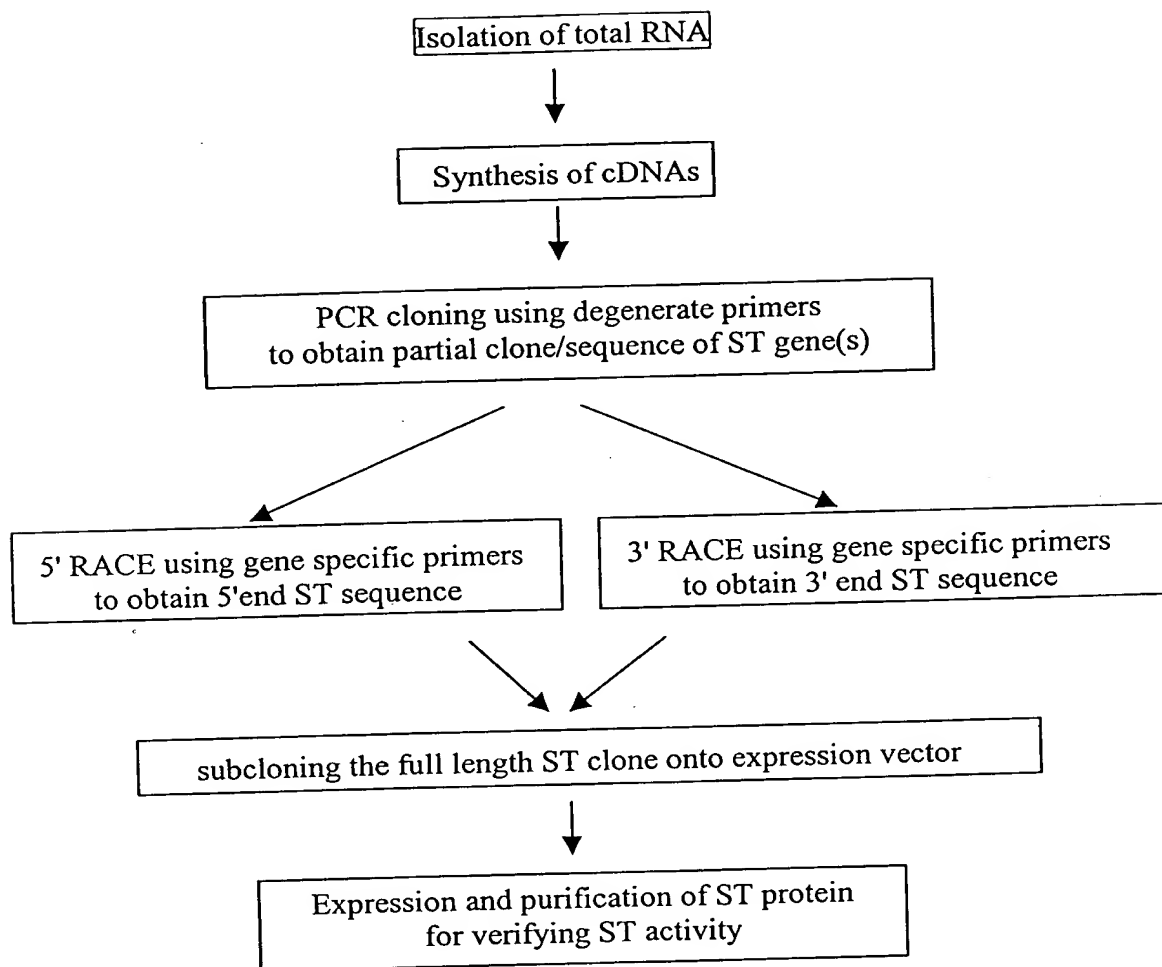


Figure 3

Primer name	Primer Sequence (from 5' to 3')	Protein sequence
Degenerate:		
Z-ST-P14 (5'primer)	TAYCCIAARAGYGGIACITGG	YPKSGTTW
Z-ST-P16 (3'primer)	YTTCCARTCICCIIIIIICCYTTYCT	RKGXXGDWK
Z-ST-P17 (3'primer)	YTTCCARTCICCIIIIIICCYTTIGC	RKGXXGDWK
Gene specific:		
Z-ST-P18 (5'primer)	ATCTGATTAACCCCGACAAGTTATTGG	
Z-ST-P19 (3'primer)	CCAATAACTTGTCGGGGTTAATCAGAT	
Z-ST-P26 (5'primer)	ATCCGAGCTCGATGGCTGGAATTTTAGC TTTGGAG	
Z-ST-P25 (3'primer)	CTAGAAGCTTACGAATGAATACGATAA TAAAC	

100150 2215360

Figure 4

ACGCGGGGAATAACTGGAATCGCTGTTGCTTAGCTACCACTGATAATGGCTGGAATTTTAGCTTTGGAGAAATGTTTCGGATCCAAG 90  
T R G I T G I A V A C . L P L I M A G I L A L E K C F G S K  
AATGAGCAAGAGAAGGAAGAAGATTCCAAATGTACAAGAGATATAGAGAGATTGTTTCTTCACTTCCCTCGAATGATTATTGGGGGGAT 180  
N E Q E K E E D S K M Y K R Y R E I V S S L P S N D Y W G D  
ACCATGAGGTTGTACAAGGGATTTTGGCAAATGGGATATCTTGACCTGGTATCATGGCTTTCGAAGATAATTTCAAGGCTCGAGAGACG 270  
T M R L Y K G F W Q M G Y L V P G I M A F E D N F K A R E T  
GACATTATCCTTACGACTCTTCCAAAGGCTGGAACGACATGGACGAAGGCACTGACGTTTGCCATCCTAACACGAGATGTTAACCCCA 360  
D I I L T T L P K A G T T W T K A L T F A I L T R D V N H P  
TCATCACCGACACATCCACTTTTGTCTTCAACCCTCATTGCTGTGTTCAAAATTTGGAGTATTGTACATGGGTAGAGAAATACGATG 450  
S S P T H P L L F F N P H S C V Q N L E Y L Y M G R E N T M  
CCAGACCTCGATATGTTGAATGAATCGCCGAGGTTGTTTGCCGGACACATCCATACTCTTTGTTGCCGGCGTCTGTTTGAATCGGGA 540  
P D L D M L N E S P R L F A G H I P Y S L L P A S V L K S G  
ACAAAAATCATCAATATAAGCCGCAACCGTAAGAGTACATTTGTGTCTTTTGGAAATTTGGCAATCTGATTAACCCCGACAAGTTATTG 630  
T K I I N I S R N R K S T F V S F W K F G N L I N P D K L L  
GACCTCGAAAAGAGCGTTGATATCTTCGCATCGGGAATCTCCTTTTGTGGACCGGAATGGAATTTCCAAGCGGAGTTCACCAATGCGGCG 720  
D L E K S V D I F A S G I S F C G P E W N F Q A E F T N A A  
TCTACTAATTCAACTTGCTATTGTTGAGTTACGAAGAAATGTTAGAGAAGCCAGTTGAAAATGTGAAGAAGCTAGCTGAGTTCATGGGA 810  
S T N S N L L L L S Y E E M L E K P V E N V K K L A E F M G  
TGTGGGTTACAGACGATGAGGAGAAACAAGGGATTGTTGATGAGATAGTTAACTTTGTAGCTTCGACAATCTGAAGAATCAACAGGTG 900  
C G F T D D E E K Q G I V D E I V K L C S F D N L K N Q Q V  
AACAAAAACGGATCAAGCTACAATTGAAAAATCGACAACAAGCATTTCTTCAGGAAAGGTGAGGTGAGAGATTGGGCAAACTATCTAACG 990  
N K N G S S Y N S K I D N K H F F R K G E V R D W A N Y L T  
TCGGAATGATTAAGAACTGGAGACGGCCGAAAAATAAATGAATCAGAGTAAAGCATTTATTATCGTGAAATAAGAATCTTACATGA 1080  
S E M I K K L E T A G K I N E S E . K H L L S . N K N L T .  
AACTTCTGAAATCTTAATAATTACTGTGAGAAATCGAACTAAATATCTCTTTGTTTATTATCGTATTCATTCGTAATAATAATTTTATT 1170  
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TTGTTAAAAA 1192  
L L K K K K K

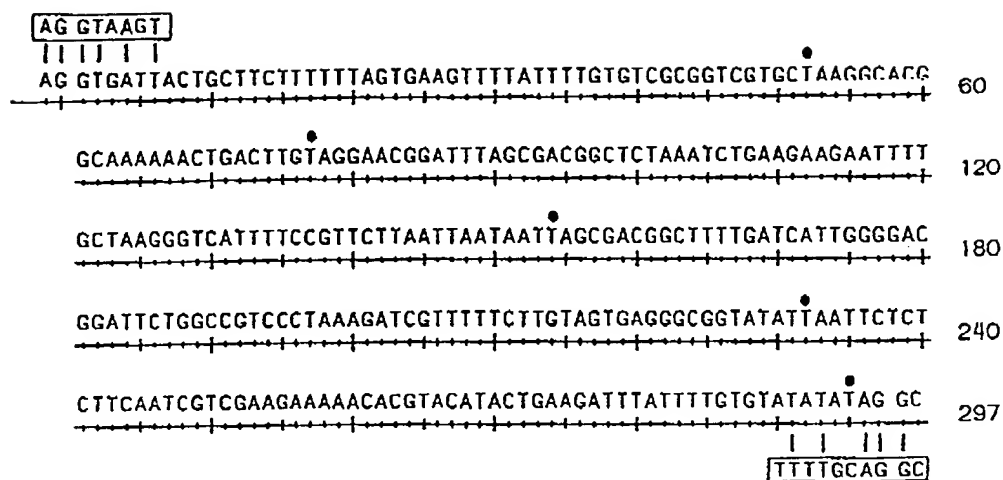
098541.22 "05.10.01

Figure 5

<i>Z. marina</i>	MAGILALEKCFGSKNEOEKEEDSKMYKRYREIVSSLPSSNDYW-GDTMRLYKGFWMQGYLV	59
<i>B. napus</i>	MSS-----SSSVPDYLRDENLTQKTKDLISSLPSEKGLVLCQMYQFQGRWHTQALL	51
<i>A. thaliana</i>	MSS-----SSSVPAYLGDDEDLTQETRALISSLPKEKGLVSEIYEFQGLWHTQAIL	51
<i>F. bidentis</i>	MET-----TKT--QFESMAEMIKKLPQHTCS--SLKGRIT--LYKYQDFWGLONNI	45
<i>H. siphonis</i>	MELIQD-----TSRPPLEYVKGVP LIKRYFAEALGPL-----	31
<b>I</b>		
<i>Z. marina</i>	PGIMAFEDNFKARETDIILTTLPKAGTTWTKALTFAILTRD-VNHPSSTPHPLLFFNPHS	118
<i>B. napus</i>	QGILTCTCKHFEAKDSDIILVTNPKSGTTWLKALVFALINRHKFPVYSSV--IILSCYQSAL	109
<i>A. thaliana</i>	QGILICTCKHFEAKDSDIILVTNPKSGTTWLKALVFALLNRHKFPVSSSGNHPLLVTNPHL	111
<i>F. bidentis</i>	EGAILAQQSEKARPDDVFLCSYPKSGTTWLKALAYAIIVTREKFDEFTS--PLLLTNI PHN	102
<i>H. siphonis</i>	-----QSFAQARPD DILLINTY PKSGTTWVSQILDMIIYQGGDLEKCNRAPI-----YV	77
<b>II</b>		
<i>Z. marina</i>	CVQNLEYLYMGRENTMPDLMLN-ESPRLFAGHIFYSLLPASA.VLKSSGTIKIINISRNKST	177
<i>B. napus</i>	LVPFLGRSLL---RSPDFDFSQLSSPRLMNTHISHLSLPE.SVKSSSSCKIVYCCRNPKDM	165
<i>A. thaliana</i>	LVPFLEGVYYY---ESPDFDFSSLPSPRLMNTTHISHLSLPE.SVKSSSSCKIVYCCRNPKDM	167
<i>F. bidentis</i>	CIPYIEKDLK---KIVENQNNSCFTP--MATHMPYHVLPKSILALNCKMVYIYRN IKDV	156
<i>H. siphonis</i>	RVPFLEVNDDEGEPSGLET LK--DTPBPRLIKSHLPLALLPQTL L DQKVQV VYVARNP KDV	135
<b>III</b>		
<i>Z. marina</i>	FVSFWKFGNLLINPDKLLD--LEKSVDFIFASGISFCGPEWNFQAEFTNAASTNSN-LLLLS	234
<i>B. napus</i>	FVSLWHFGKKLAPEETADYPIEKAVEAFCEGKFIGGPFWDH VLEYWYASLENPNK VLFVS	225
<i>A. thaliana</i>	FVSLWHFGKKLAPEETADYPIEKAVEAFCEGKFIGGPFWDH VLEYWYASLENPNK VLFVT	227
<i>F. bidentis</i>	IVSFYHFGREITKLPLEDAPFEAAFDFFYHGISQFGPYWDH L L GYWKASLERPEVILFLK	216
<i>H. siphonis</i>	AVSY YHF-HRMEKAHPEPGTWD SFLSKFMAGEVS YGSWYQH VQEW--ELSRTHP VLYLF	192
<b>IV</b>		
<i>Z. marina</i>	YEEHLEKFPVENVKKLAEFHSCGFTDDEEKQGI VDEIVKLCSSFONLKNQOVNKNNGS--SYN	292
<i>B. napus</i>	YEEPKKKTGETIKRIAELGCGLVGDEE---VRAIVKLCSSFESLSSLEVNREGKLP S--	279
<i>A. thaliana</i>	YEE LKKQTEVEMKRIAELGCGFIEDEE---VREIVKLCSSFESLSNLEVNKEGKLPN--	281
<i>F. bidentis</i>	YEDVKKDPTSNVKKRLAEFIFGYPTTFEEKEGVIESI IKLCSSFENLSNLEVNKSGNSKGFL	276
<i>H. siphonis</i>	YEDMKENPKKREIQKILEFVGRSLPEET---MDFH VQHTSFKEMKKKNPMTNYTTVPQEL	247
<b>• - - - • - - - •</b>		
<i>Z. marina</i>	SKIDNKHFFRKGEVRDWAYNYLTSEMIKKLETA--GKINESE	331
<i>B. napus</i>	G-METRAFFRKGEVGGWRDILTIESLA EVIDRTIE EKFGQSG LKFS C	324
<i>A. thaliana</i>	G-IETKTFFRKGEI GGWRDSFE	302
<i>F. bidentis</i>	P-IENRLYFRKAKDGDWKNYFTDEMT EKIDKLI DEKLSATGLVLK	320
<i>H. siphonis</i>	MDHSISPFMRKGHAGDWKTTFTVAQNERFDADYAEK MAGCSLSFRSEL	295

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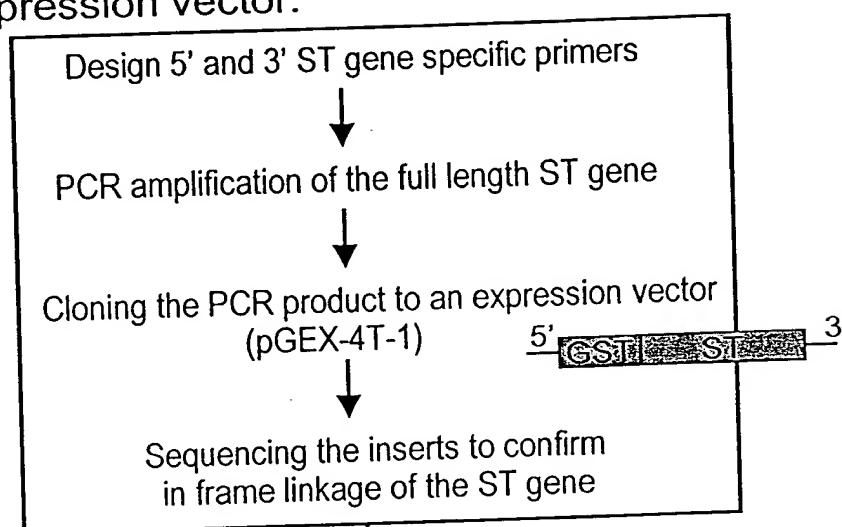
Figure 6



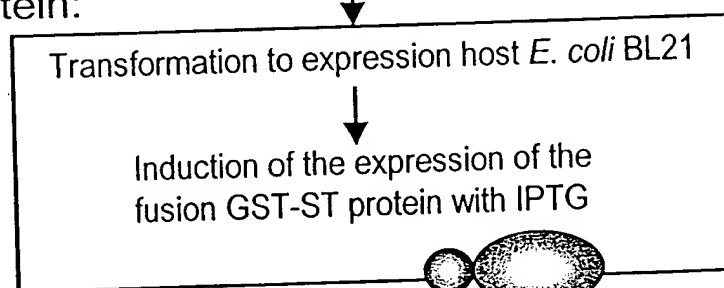
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Figure 7

Subcloning of full-length ST  
gene onto expression vector:



Expression of  
ST fusion protein:



Determination of  
enzymic activity:

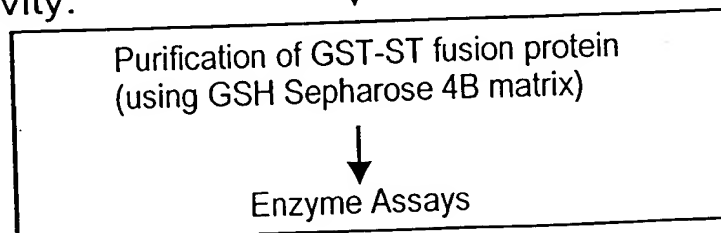
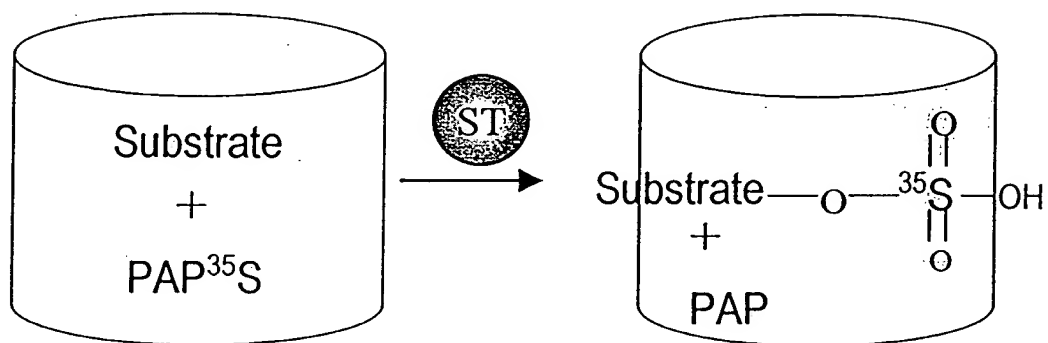




Figure 8

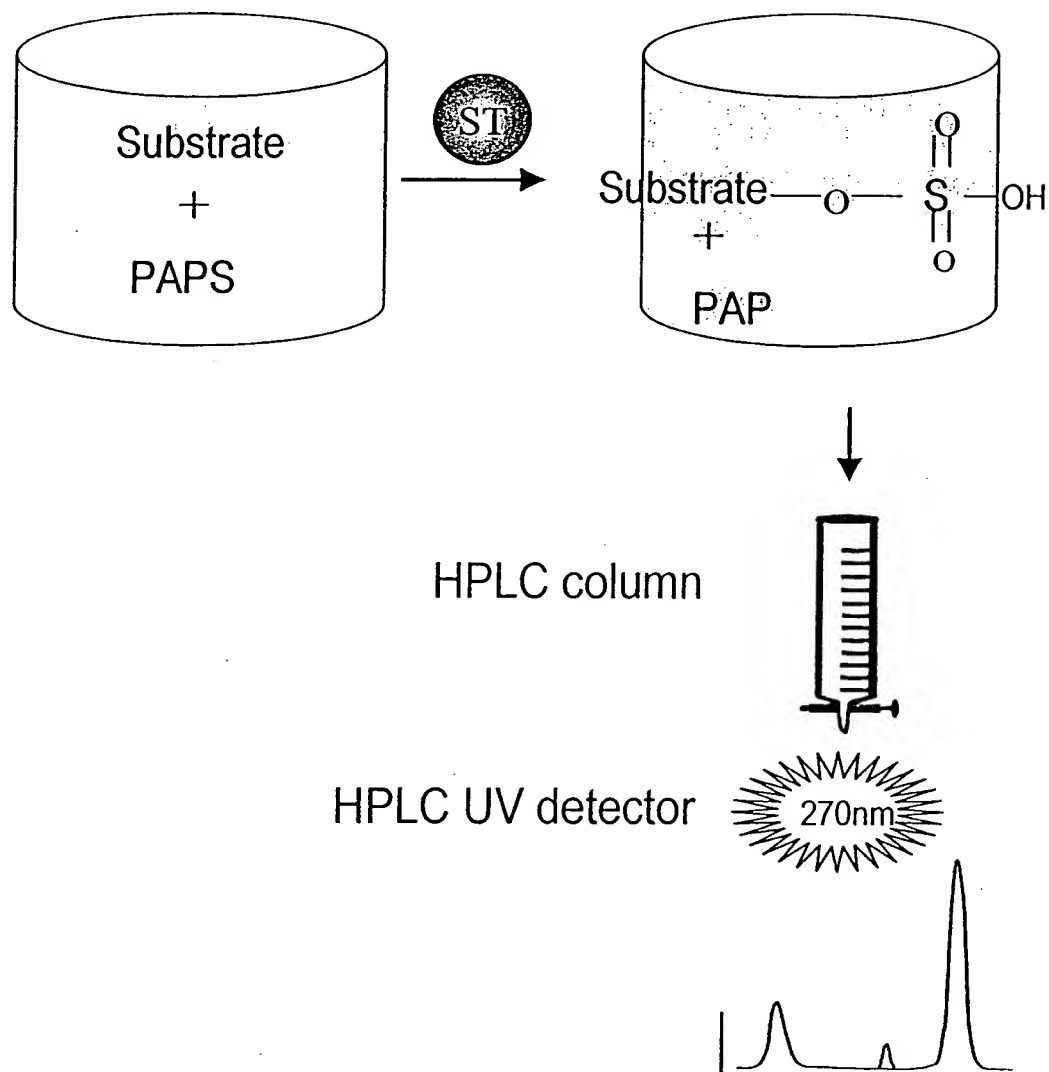
ST catalyzed sulfur transference:



09854122-054.001

Figure 9

ST catalyzed sulfur transferation:



**Figure 10**

Substrate	Sp. Enzyme Activity (nmol/min/mg)		
	Z. marina ST	Flaveria ST	Rat Dopa/tyrosine ST
Quercetin	60-100	0.27	
P-nitrophenol	0.3		125

095422-05104  
T00T50" 22T45860

Figure 11

Primer Names	Primer sequences (From 5' to 3')	Corresponding conserved Protein Sequences
5' primers:		
Z-ADH-P1	GTIGCITGGGARSCIGGIAARCC	VAWEA(P)GKP
Z-CH-P1	CARRAIATGGTITTYACIGTITAYGG	QD(K)MVFTVYG
Z-PAL-P1	AARCAYCAYCCIGGICARATIGARGC	KHHPGQIEA
3'primers:		
Z-ADH-P5	TTRTARTTICCRAARAAIGTICCYTT	KGTFFGNYK
Z-CH-P4	GGIARIGCIARDATDATICCGIIRCA	CPGIILALP
Z-PAL-P4	YTCIACYTCYTTIGGIARIACIGC	AVLPKEVE

FOOTING 2215350

**Figure 12**

Gene Name	Size of the genes	Size of the partial clone	Strain File Designation
Alcohol dehydrogenase (ADH)	~1300 bp	938 bp	S19
Cinnamate 4-hydroxylase (CH)	~1500 bp	1083 bp	S20
Phenylalanine ammonia lyase (PAL)	~2000 bp	910 bp	S21
Peroxidase (POX)	~950 bp	590 bp	S2

10984121\_051001  
T00T50" 22T4560

Figure 13

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GTGGCGTGGGAACCGGGGAAACCATTGGTTATGGAGGAAGTTGACGTCGCACCACCGCAGAAAGATGAGGTTTCGTGTCAAGATCAAGTTC 90  
V A W E P G K P L V M E E V D V A P P Q K D E V R V K I K F  
ACGGCACTCTGTACACCGATGTCTTCTTTGGGAAGCCAAGGGCCAAACGCCGGTGTTCCTCGTATCTTCGGTCACGAGGCCGGAGGG 180  
T A L C H T D V F F W E A K G Q T P V F P R I F G H E A G G  
ATTGTGGAAGTGTGGGGAAGGCGTGACCGACGTCGTGCGGGAGATCACGTCCTCCAGTTTTCACTGGGGAATGTAAGAATGCCGC 270  
I V E S V G E G V T D V V P G D H V L P V F T G E C K E C R  
CACTGCAAAATCAGAAGAGAGTAATATGTGCGATCTCCTTCGAATAAACACCGATCGGGGTGTCATGCTCGCTGATGGAAAATCTAGATTC 360  
H C K S E E S N M C D L L R I N T D R G V M L A D G K S R F  
TCCATCAAAGGCAACCAATCTACCATTTTGTGCGAACCTCCACTTTTCAGTGAATACACTATTGTGCGATGTTGGTTGTTTGGCTAAGATC 450  
S I K G K P I Y H F V G T S T F S E Y T I V H V G C L A K I  
AACCCTGAAGCACCTCTTGACAAAGTTTGCATTCTTAGCTGTGGAATTTCCACCGGATTGGCGCGACGGTTAATGTGGCAAAGCCGACC 540  
N P E A P L D K V C I L S C G I S T G F G A T V N V A K P T  
AAAGGTTCTTCCGTCGCCGCTCTCGGCCTGGGAGCCGTCGGTCTTTCTGCTTGTGAAGGAGCGAGGGTTTCTGGAGCGGCGAGAATAATC 630  
K G S S V A V F G L G A V G L S A C E G A R V S G A A R I I  
GGTATCGACATCAATCCTGATAGATTGAAGAAGCTAGGAAATTCGGGTGCACTGATTTTGTGAATCCAAAGGAACACACCAAACCTGTT 720  
G I D I N P D R F E E A R K F G C T D F V N P K E H T K P V  
CAAGAGGTTATTGCTGAAATGACCGACGGTGGAGTAGATCGTTGTTTGAATGTACTGGTAACATCAACGCCATGATTTCTGCATTGCAA 810  
Q E V I A E M T D G G V D R C L E C T G N I N A M I S A F E  
TGGTCCATGATGGATGGGGTGTGGCTGTTCTGGTGGGAGTTCCTCAGAAAGATGCAGTTTTCAAGACTCACCCACTGCAATTTCTGAGT 900  
C V H D G W G V A V L V G V P Q K D A V F K T H P L Q F L S  
GAAAAAACACTCAAGGGCACCTTACTTCGGCAACTATAA 939  
E K T L K G T L L R Q L .

09854162 0501001

Figure 15

CAGGAGATGGTGTTCACGGTGTATGGCGATCACTGGAGGAAGATGCGGAGGATCATGACTGTGCCTTTTTTACCAACAAGGTCGTCCAA 90  
 Q E M V F T V Y G D H W R K M R R I M T V P F F T N K V V Q  
 CAGTACCGATTCCGATGGGAGGATGAGACGAAAAGAGTCGTGGAGGATTTAGAGGCCAACCCCAAGCCGCGACGGAAGGGACTGTGCTG 180  
 Q Y R F G W E D E T K R V V E D L E A N P K A A T E G T V L  
 AGGAGGAGGTTGCAGCTGATGATGTACAATAATCTGTACAGAATCATGTTTGACCGGAGGTTTCGAGAGTGAAGATGATCCTTTGTTTCTG 270  
 R R R L Q L M M Y N N L Y R I M F D R R F E S E D D P L F L  
 AAGCTCAAGGCGTTGAACGGGGAGAGGAGTAACTGGCGCAGAGCTTCGACTACAACTACGGAGATTTATCCCCATCTTGAGACCTTTT 360  
 K L K A L N G E R S K L A Q S F D Y N Y G D F I P I L R P F  
 CTGAAAGGCTACCTTAAGAAATGCCAAGAGTTGAAGGACAATCGAATTAAGCTGTTTAAGGATTACTTCGTCGACGAGAGGAGGAAGTTG 450  
 L K G Y L K K C Q E L K D N R I K L F K D Y F V D E R R K L  
 TTAGGTTGATGACCTCCAAGTCGGAACAGCAGAAGTGCGCCATCGATCATATTCTGGAAGCCGAGAAGAAAGGAGAGATCAATGAGGAC 540  
 L G S M T S K S E Q Q K C A I D H I L E A E K K G E I N E D  
 AACGTCCTGTACATCGTGGAGAACATCAACGTCGCGGCCATTGAGACGACACTATGGTCGGTGGAGTGGGGGGTGGCGGAGTTGGTGAAC 630  
 N V L Y I V E N I N V A A I E T T L W S V E W G V A E L V N  
 CACCCGAAATCCAGAAGAACTGAGACACGAGTTGGACACTGTACTCGGCCCGCGGTACAGGTGACCGAACAGACACGGCGAAGCTT 720  
 H P E I Q K K L R H E L D T V L G P G V Q V T E P D T A K L  
 CCGTACCTCCAAGCTGTATCAAAAGAGACCTTACGTCTCCGCATGGCAATCCCTCTTTTGGTGCCGCACATGAACCTTCACGATGCGAAA 810  
 P Y L Q A V I K E T L R L R M A I P L L V P H M N L H D A K  
 CTCGGAAGCTACGACATCCCTGCCGAGAGCAAGATTCTTGTCACGCATGGTTCTGCTAACAATCCGGAGAAGTGAAGAATCCGGAG 900  
 L G S Y D I P A E S K I L V N A W F L A N N P E K W K N P E  
 GAGTTCAGACCGGAGAGGTTTCATGGAAGAAGAGTCCAAGGTGCAAGCTAGTGGGAACGACTTCAGGTACTTGCTTTTGGCACTGGAAGG 990  
 E F R P E R F M E E E S K V E A S G N D F R Y L P F G T G R  
 AGGAGCTGTCCCGGCATAATCTTCGCCCTCCCAAGGGCGAATTCTGCAGATATCCATCACACTGGCGGCCGCTCGAGCATGCATCTAGAG 1080  
 R S C P G I I F A L P R A N S A D I H H T G G R S S M H L E  
 GGCCC 1085  
 G P

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**B E N J A M I N**

Figure 17

AAGCATCACCCGGGTCAGATGGAGGCCGTCTCCCAAAGAAGTCGAAACAGGACAGGTACGCTCTTCGGACGTCTCCCCAGTGGCTGGG 90  
 S I T R V R W R P S S P K K S K Q D R Y A L R T S P Q W L G  
 TCCGCAGGTGGAAGTTATTCGAGCATCGACCAAGTCGATAGAGCGAGAGATCAACTCCGTGAATGACAACCCACTCATCGATGTCTCCCG 180  
 P Q V E V I R A S T K S I E R E I N S V N D N P L I D V S R  
 TAACAAGGCTCTCCACGGCGGAAACTTCCAAGGCACGCCATCGGAGTATCCATGGACAACACCCGTCTGGCCATCGCTGCCATCGGGAA 270  
 N K A L H G G N F Q G T P I G V S M D N T R L A I A A I G K  
 ACTCATGTTCCGCCAGTTCTCCGAGTTGGTGAACGACTTCTACAACAACGGACTTCCGTGCAATCTATCCGGTGGCAGGAACCCAGTCT 360  
 L M F A Q F S E L V N D F Y N N G L P S N L S G G R N P S L  
 TGATTACGGATTCAAAGGTGGAGAAATCGCCATGGCTTCTTATTGTTCCGAGCTTCAGTTCCTCGCAAACCCAGTAACCAACCACGTTCA 450  
 D Y G F K G G E I A M A S Y C S E L Q F L A N P V T N H V Q  
 ATCCGCCGAGCAACACAACCAAGATGTAAATTCTCTCGGTCTCATCTCCGCCAGAAAGACGGCGGAATCAATCGAGATTCTAAAGCTCAT 540  
 S A E Q H N Q D V N S L G L I S A R K T A E S I E I L K L M  
 GACATCTACATTCTTGGTTGGAATCTGCCAAGCCATCGATCTCAGACACATGGAAGAAAACCTTAAAGCTTCCGTGAAGAACACAGTGAG 630  
 T S T F L V G I C Q A I D L R H M E E N L K A S V K N T V S  
 TCAAGTGGCGAAACGCGTCTCACCATGACCGCTAACGGTGAGCTCCACCCCTCCCGTTTCTGCGAGAAAGACCTTCTGAAAGTAGTTGA 720  
 Q V A K R V L T M T A N G E L H P S R F C E K D L L K V V D  
 CAGGGAGTACGTGTTTTCTGTACATCGACGACCCATGCAGCGCCACTTACCCACTCATGCAGAAACTCCGATCCGTACTCGTCGACCATGC 810  
 R E Y V F S Y I D D P C S A T Y P L M Q K L R S V L V D H A  
 TCTGAACAACGGTGACAAAGAGAAAAGACGAGGCAATGTCGATATTCCAGAAGATCGCCGTCTTCGAGGAGGAGTTGATTGCCGTCTTCCC 900  
 L N N G D K E K D E A M S I F Q K I A V F E E E L I A V F P  
 CAAGGAGGTCGA 912  
 K E V E

095422-0501

Figure 18

Z. Marina	-----	0
Arabidopsis	MDQIEAMLCGGGEEKTKVAVT--TKTLADPLNWGLAADQMKGSHLDEVKKHVVVEEYRRFPVVN	58
Wheat	M-----ACAWRSRSRADPLNWGKAAEELSSSHLEAVRRMVVEEYRKPVVV	44
Z. Marina	-----	0
Arabidopsis	LGGETLTIGQVAAISTVGGSVKVELAETSAGVKAASSDWVHESMNKGTDSYGVTGFGAT	118
Wheat	MEGAT-TIAMVAAVAA-GSDTRVEIDESARGRVEKSSDWVMNSMMNGTDSYGVTGFGAT	102
Z. Marina	-----	0
Arabidopsis	SHRRTKNGTALQTELIRFLNAGIFGNTKETCHTLPQSATRAAMLVRVNTLLQGYSGIRFE	178
Wheat	SHRRTKEGGALQRELIRFLNAGAFGTGTDG-HVLPAAATRAAMLVRVNTLLQGYSGIRFE	161
Z. Marina	-----SIT-----RVRWRPSSF-----	12
Arabidopsis	ILEAITSLLNHNISPSLPLRGTTITASGHLVPLSYIAGLLTGRPNISKATGPDGESLTKKEA	238
Wheat	ILETTIATLLNANVTCLPLRGTTITASGDLVPLSYIAGLV TGRPNISHATAPDGS KVNAAEA	221
Z. Marina	-----	12
Arabidopsis	FEKAGISTGFFDLQPKGLALVNGTAVGSGMASMVLFEANVQAVLAEVLSAIFAEVMSGR	298
Wheat	PKTAGIOHGFEELOPKGLAMVNGTAVGSGLASMVLFEANVLSLAEVLSGVFCEVMNGK	281
Z. Marina	-----KKS KQDRYALRTSP	26
Arabidopsis	PEFTDHLTHRLKHHHPGQIEAAAIMHEHILDGSSYMKLAQKVVHEMDPLQKPKQDRYALRTSP	358
Wheat	PEFTDHLTHRLKHHHPGQIEAAAIMHEHILEGSSYMLAKKLGELDPLMKPKQDRYALRTSP	341
Z. Marina	-----	86
Arabidopsis	QWLGPQVEVIRASTKSIEREINSVNDNPLIDVSRNKALHGGNFQGTPIGVSMDNTRLAIA	418
Wheat	QWLGPQIEVIRQATKSIEREINSVNDNPLIDVSRNKAIHGGNFQGTPIGVSMDNTRLAIA	401
Z. Marina	-----	146
Arabidopsis	AIGKLMFAQFSELVNDFYNGLPSNLSGGRNPSLDYGFKGGEIAMASYCSELQFLANPVT	478
Wheat	AIGKLMFAQFSELVNDFYNGLPSNLTASSNPSLDYGFKGAEIAMASYCSELQYLANPVT	461
Z. Marina	-----	206
Arabidopsis	NHVQSAEQHNQDVNSLGLISARKTAESFEILKLMSTFLVIGICQAIIDLRLHMEENLNASVK	538
Wheat	SHVQSAEQHNQDVNSLGLISSRKTSFAVDILKLMSTFLVIGICQAVDLRLHLEENLRQTVK	521
Z. Marina	-----	266
Arabidopsis	NTVSQVAKRVLTMTANGELHPSRFCEKDLLKVVDREYVFSYIDDPSCSATYPLMQKLF SVL	598
Wheat	NTVSQVAKRVLTGTINGELHPSRFCEKDLLKVVDREQVFTYVDDPSCSATYPLMQRLRQVI	581
Z. Marina	-----	303
Arabidopsis	VDHALNNGDKKDEAMSIFOKIAVFEEELIAVFPKEV	658
Wheat	VDHALSNGETEFNAVTSIFOKIGA FEEELKAVLPKEVEAARAA YGNGTAPIPNRIKECRS	641
Z. Marina	-----	303
Arabidopsis	YPLYRFVRRELGTIKL LTGEV VSPGEEF DKVFTANCEGK LIDPLMDCLKEWNGA E I F I C	717
Wheat	YPLYRFVRRELGTETLTGENTRSPGEEV DKVFAANQSKHIDAILECLKEWNGEPLFLC	700

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Figure 19

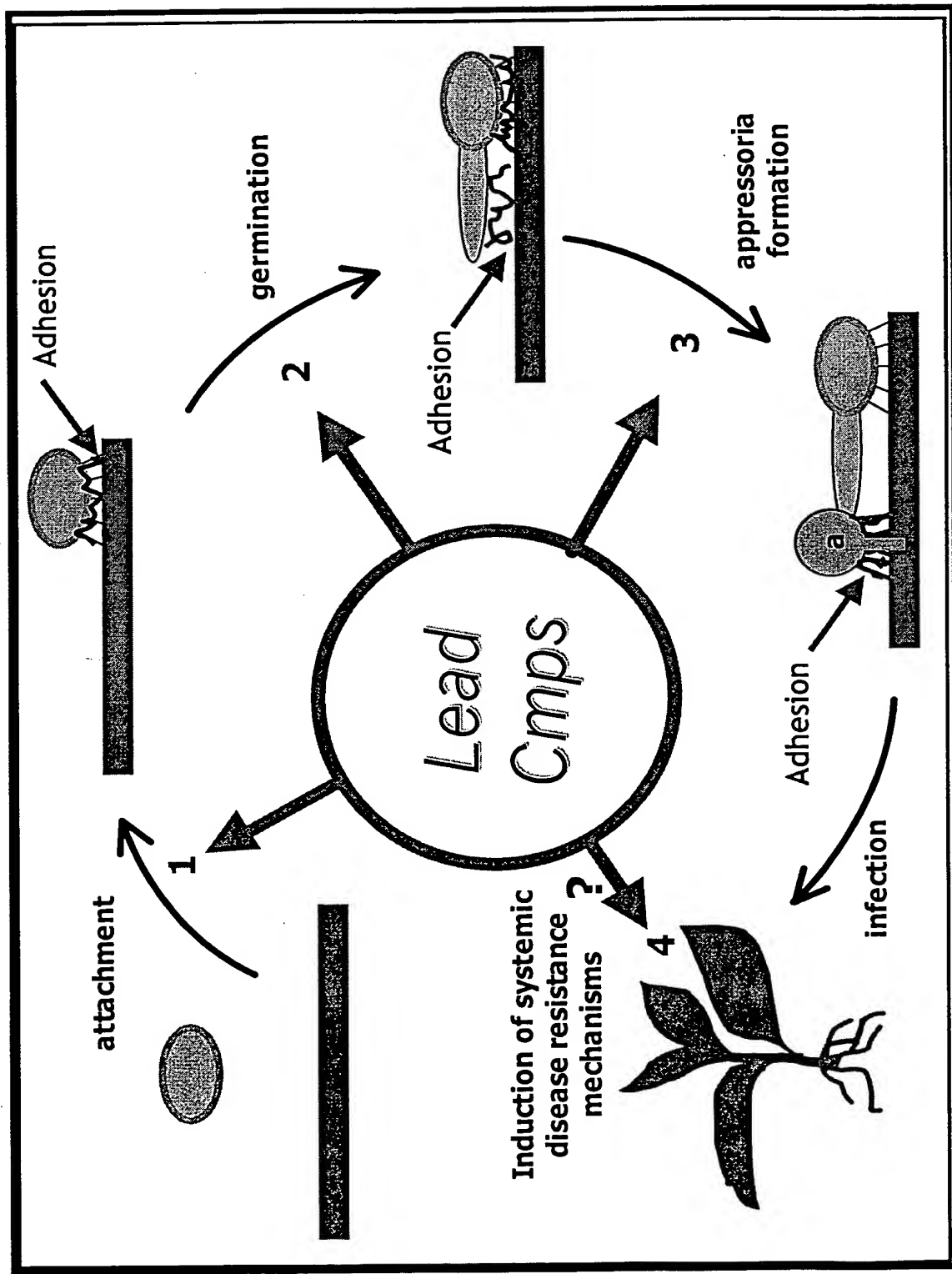


Figure 20

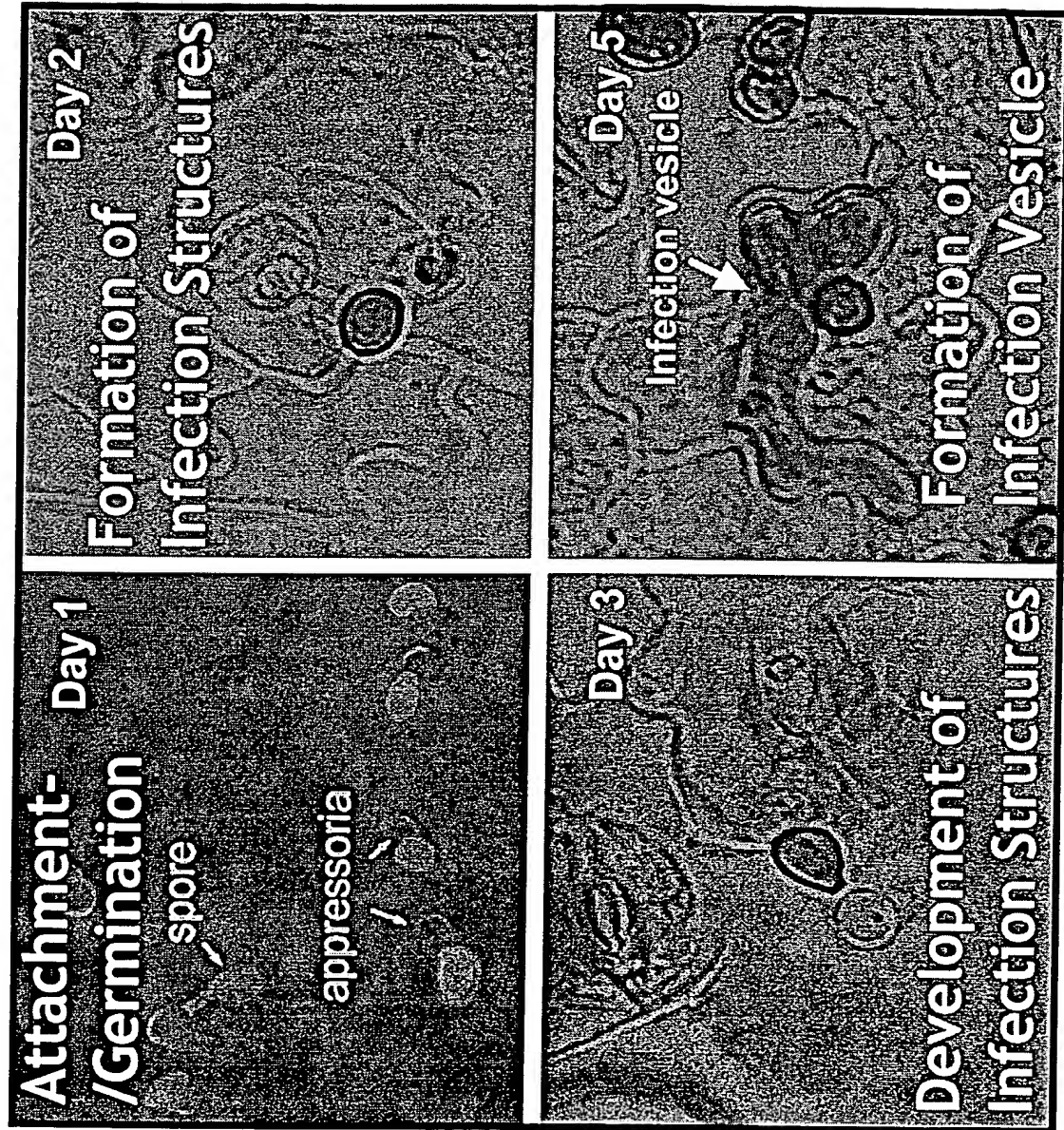


Figure 21A

	Disease	Fungus	Crops
Ascomycetes	Glume Blotch	<i>Septoria nodorum</i>	Cereals
	Leaf Spot	<i>Septoria tritici</i>	Cereals
	Powdery Mildew	<i>Erysiphe</i> spp.	Cereals Grapes
	Leaf Blotch	<i>Rhynchosporium secalis</i>	Cereals
	Stem Canker	<i>Leptosphaeria maculans</i>	Cereals
Basidiomycetes	Yellow Rust	<i>Puccinia striiformis</i>	Cereals
Oomycetes	Blue mold	<i>Peronospora tabacina</i>	Tobacco
	Eyespot	<i>Pseudocerospora herpotrich</i>	Cereals

Figure 21B

Taxa	Disease	Fungus	Plant Infection	In vitro adhesion	Plant adhesion
Ascomycetes	Rice Blast	<i>Magnaporthe grisea</i>	✓	✓	✓
	Brassica Dark Leaf Spot	<i>Alternaria brassicicola</i>	✓	✓	ongoing
	Bean Anthracnose	<i>Colletotrichum lindemuthianum</i>	✓	✓	✓
	Strawberry Anthracnose	<i>C. fragariae</i> <i>C. acutatum</i>	✓	✓	✓
	Avocado Anthracnose	<i>C. gleosporioides</i>	✓	Not Tested	Not Tested
	Green Mold	<i>Penicillium italicum/digitatum</i>	✓	Not Tested	Not Tested
	Apple Scab	<i>Venturia inaequalis</i>	✓	Not Tested	Not Tested
	Grey Mold	<i>Botrytis cinerea</i>	Not Tested	✓	Not Tested
	Leaf Spot	<i>Septoria tritici</i>	✓	Not Tested	Not Tested



Figure 22

	Disease	Fungus	Plant Infection	In vitro adhesion	In planta adhesion
Basidiomycetes	Wheat brown rust	<i>Puccinia recondita</i>	✓	✓	✓
Oomycetes Pythiaceae	Damping-off	<i>Pythium aphanidermatum</i>	✓	Ongoing	ongoing
	Potato late blight	<i>Phytophthora infestans</i>	✓	ongoing	ongoing
Peronosporaceae	Downy Mildew	<i>Peronospora parasitica</i>	ongoing	✓	ongoing



Figure 23

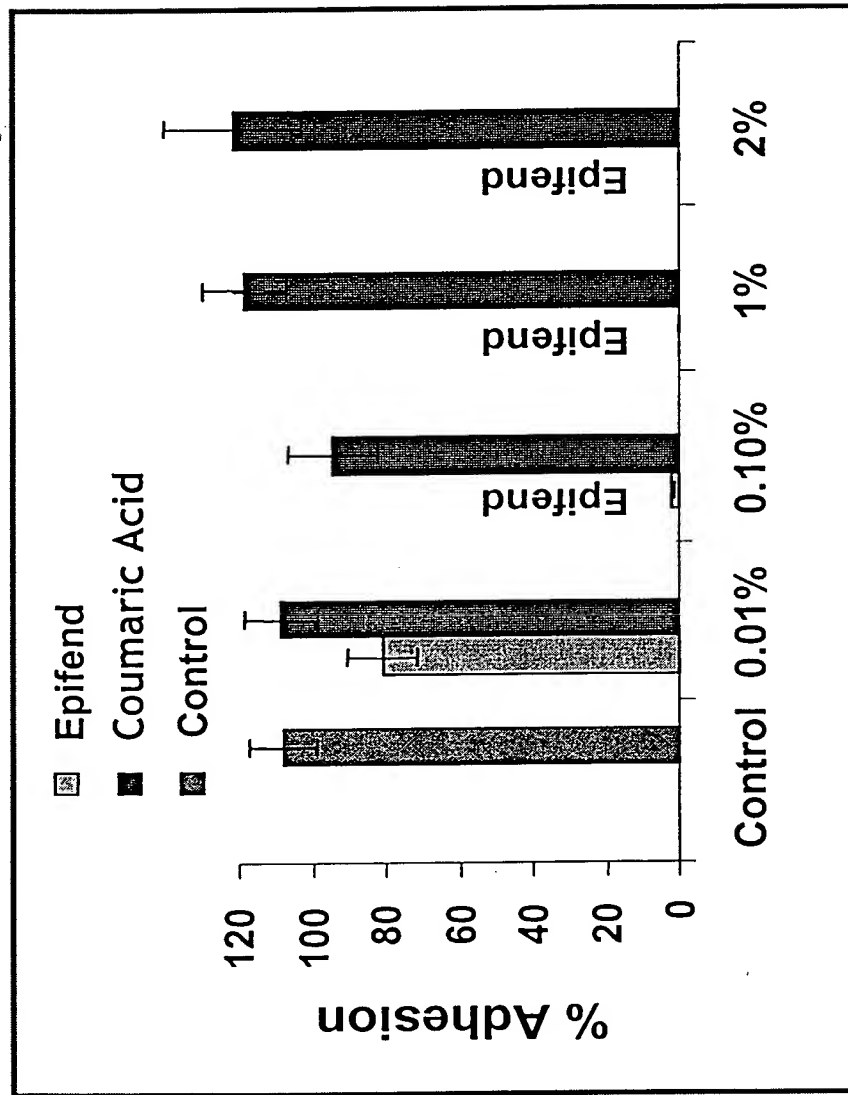


Figure 24

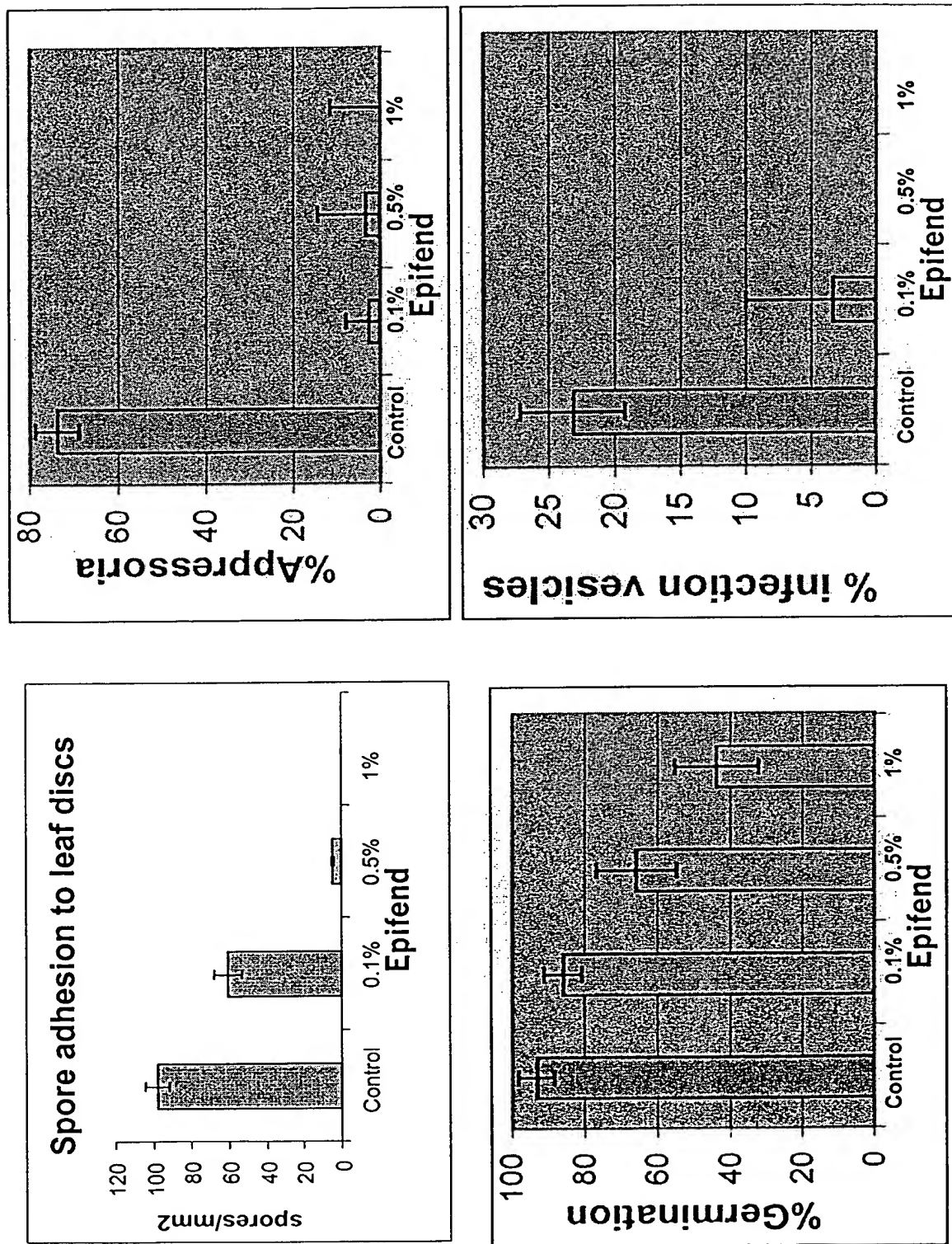


Figure 25

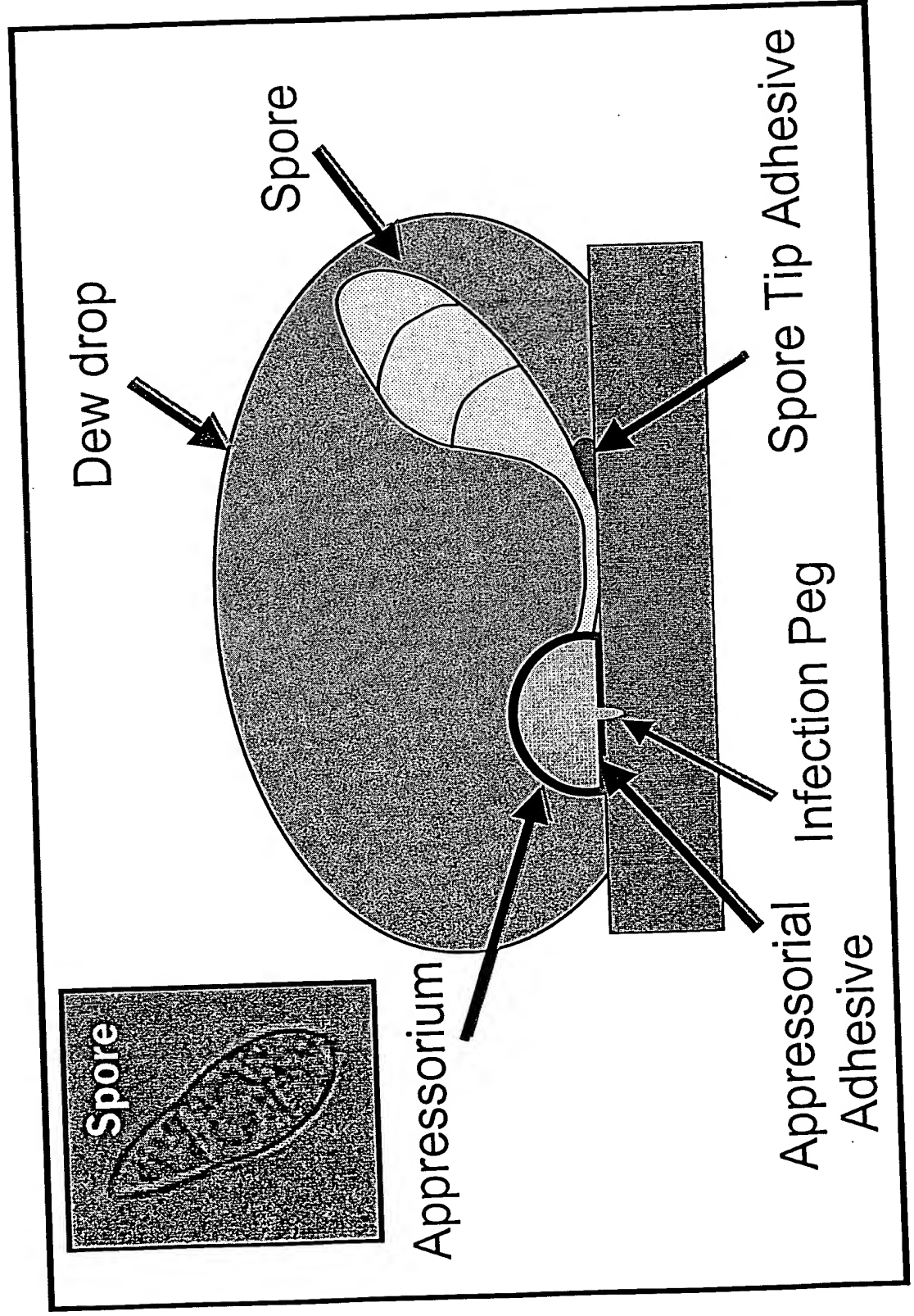


Figure 26

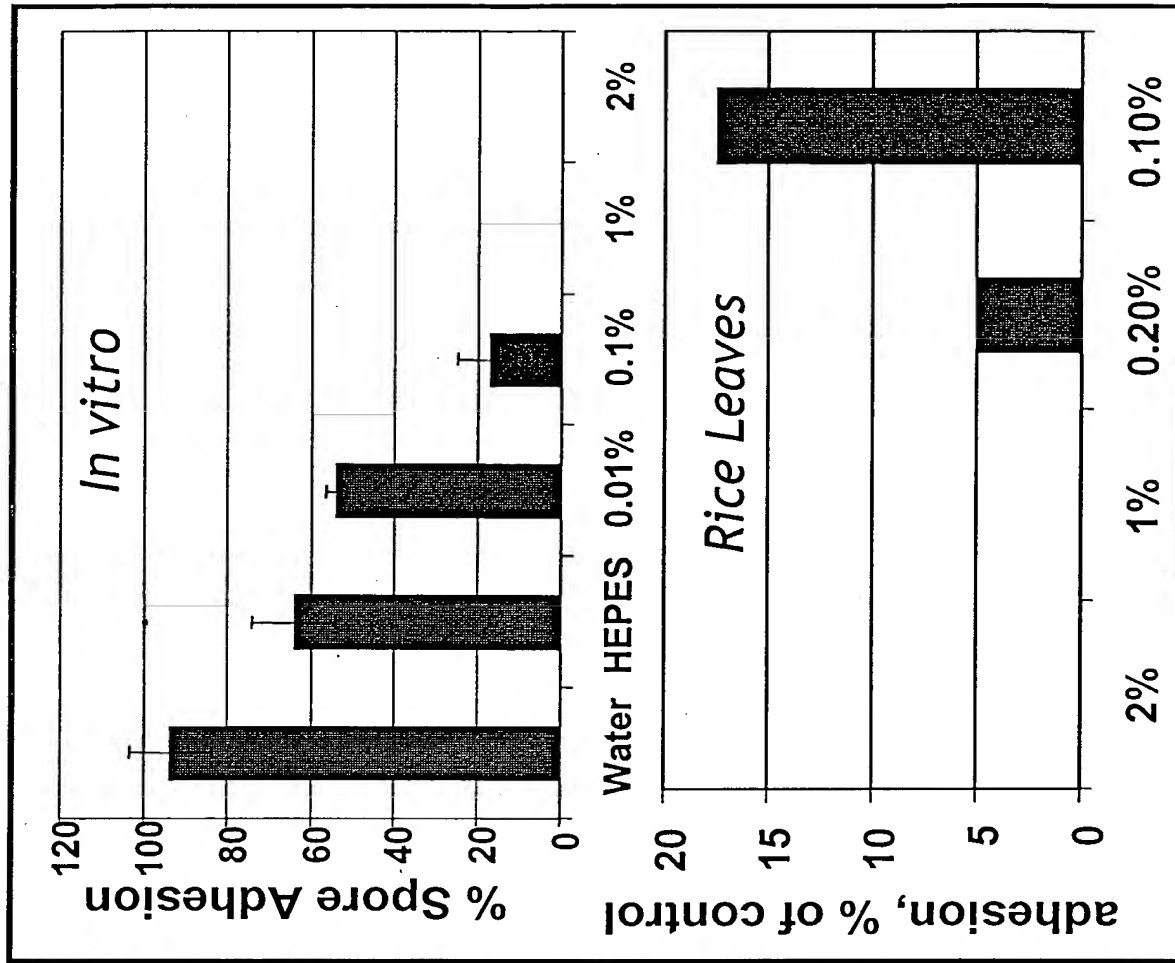
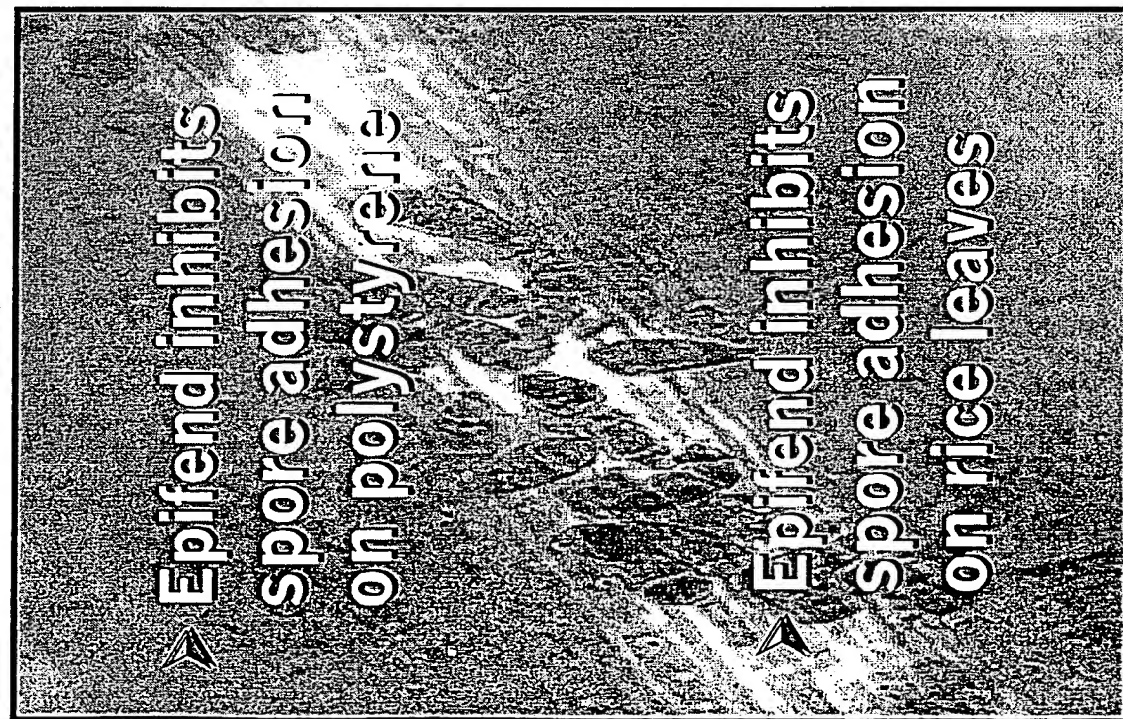


Figure 27

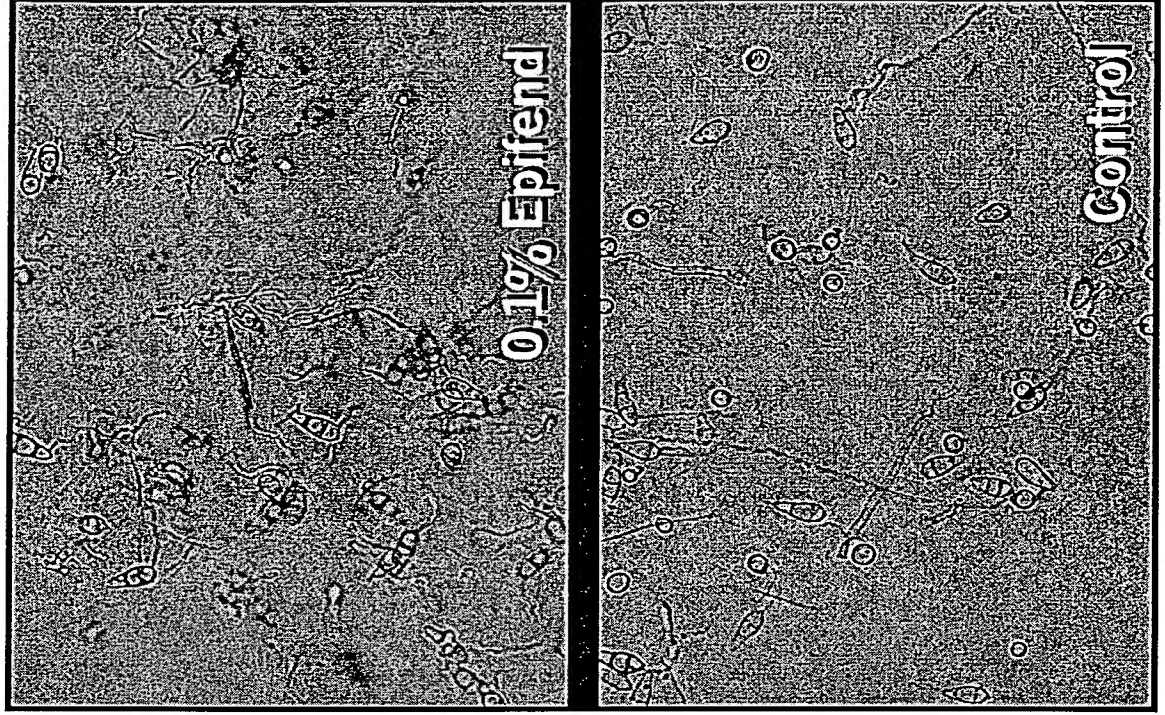
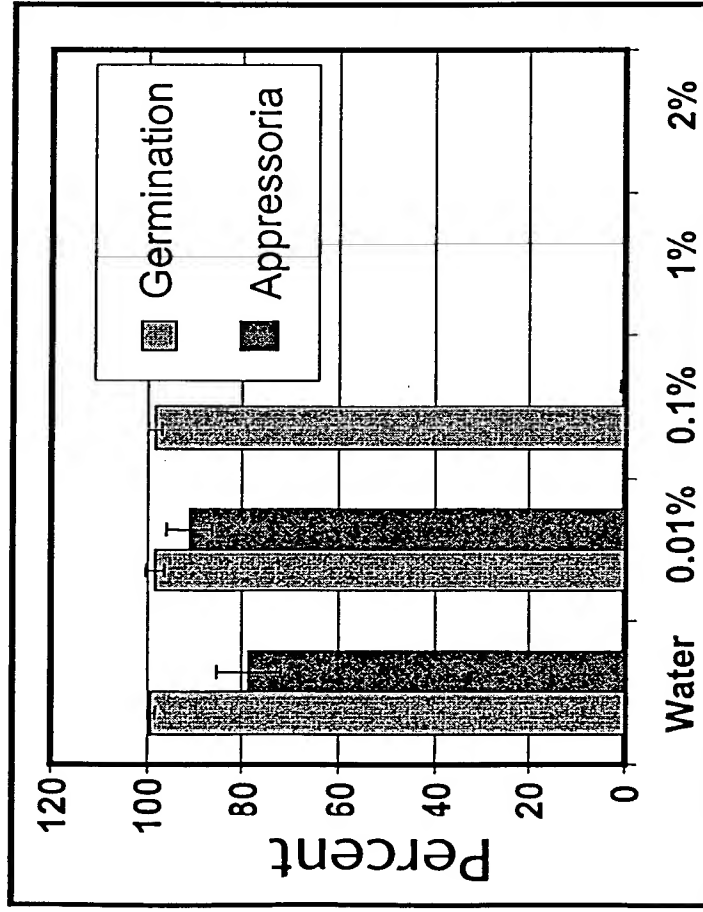




Figure 28

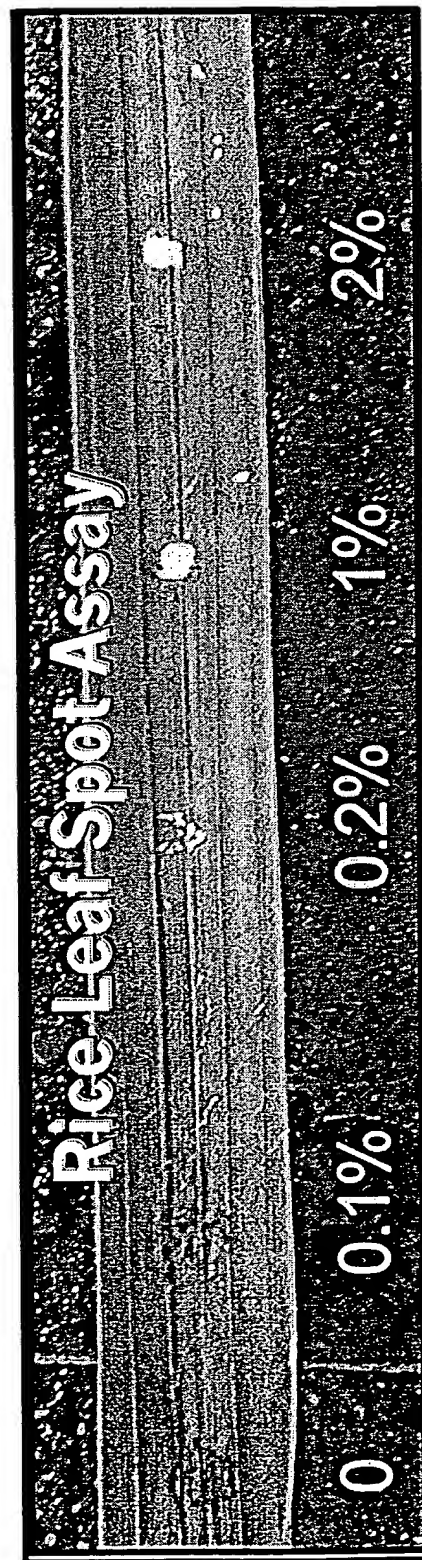
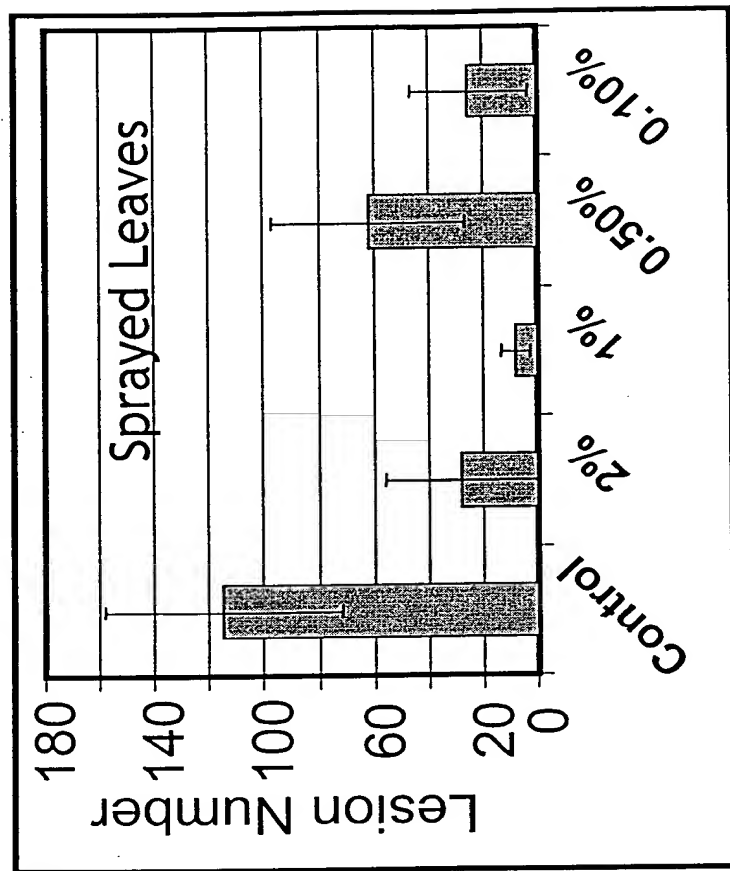
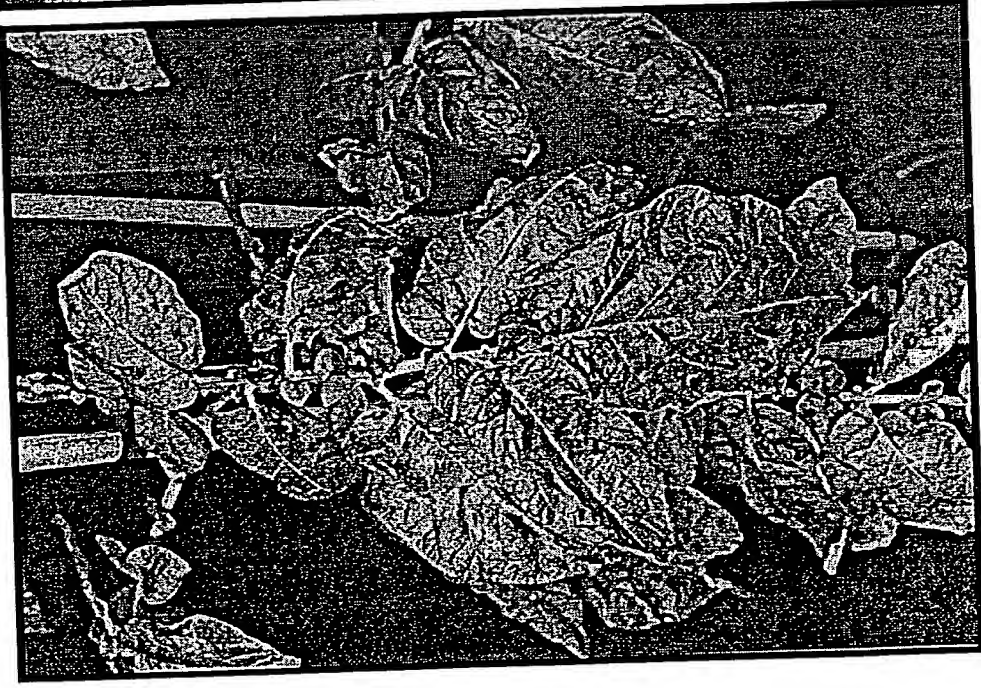


Figure 29



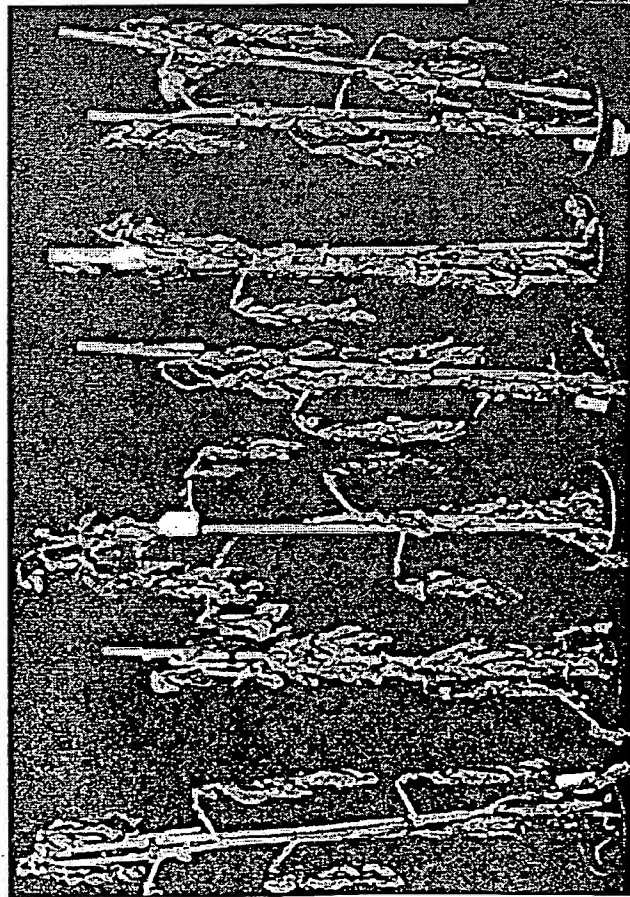
1% Epifend, 4 days



Control, 4 days

100150" 22T45860

Figure 30



Control 11 days

1% Epifend 11 days

